

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/012977 A1

(51) International Patent Classification⁷: **G02B 26/08,**
7/182

(74) Agent: **I.P. 21 LIMITED;** Norwich Research Park, Col-
ney, Norwich NR4 7UT (GB).

(21) International Application Number:
PCT/GB2004/003194

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AF, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date: 22 July 2004 (22.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0317105.5 22 July 2003 (22.07.2003) GB
0317104.8 22 July 2003 (22.07.2003) GB
0406991.0 27 March 2004 (27.03.2004) GB
0412157.0 29 May 2004 (29.05.2004) GB

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **PO-
LATIS LTD** [GB/GB]; 332-2 Cambridge Science Park,
Milton Road, Cambridge CB4 0FW (GB).

(72) Inventor; and

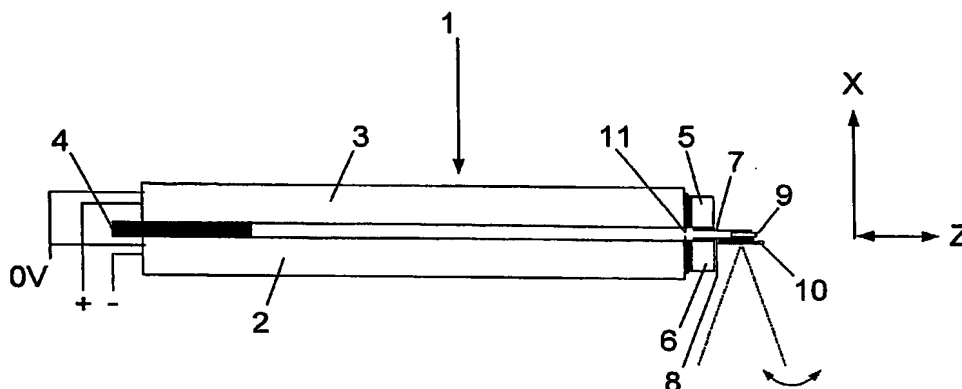
(75) Inventor/Applicant (*for US only*): **DAMES, Andrew,**
Nicholas [GB/GB]; 74 Defreville Avenue, Cambridge
CB4 1HU (GB).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,*

[Continued on next page]

(54) Title: OPTICAL ELEMENT POSITIONING DEVICES



(57) Abstract: An optical element positioning arrangement comprises a reflective optical element, actuators, flexures located between the actuators and said optical element, the arrangement being configured so that when a first actuator is actuated any displacement generated is transmitted via a flexure to said optical element and provided that a second actuator's displacement defers from the displacement of the first, the optical element is caused to swing, characterised in that the actuators are spaced relative to one another and placed substantially parallel to one another.

WO 2005/012977 A1

IT, LU, MC, NI, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.